**IN THE UNITED STATES DISTRICT COURT**
**FOR THE EASTERN DISTRICT OF NORTH CAROLINA**
**SOUTHERN DIVISION**

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| CAPE FEAR PUBLIC UTILITY AUTHORITY,<br><br>Plaintiff,<br><br>v.<br><br>THE CHEMOURS COMPANY FC, LLC, et al.<br><br>Defendants. | Case No. 7:17-CV-00195-D |
| BRUNSWICK COUNTY, a governmental entity;<br><br>Plaintiffs,<br><br>v.<br><br>DOWDUPONT, INC., et al.,<br><br>Defendants. | Case No. 7:17-CV-00209-D |

# MASTER COMPLAINT OF PUBLIC WATER SUPPLIERS

*"A river is the report card for its watershed."*
*– Alan Levere, Connecticut Department of Environmental Protection*

Plaintiffs file this Master Complaint of Public Water Suppliers for incorporation and adoption by individual plaintiffs in the above captioned matters. This Master Complaint is submitted to serve the administrative functions of efficiency and economy and to present certain common claims and common questions of fact and law for appropriate action by this Court. Additional facts pertaining

solely to individual Plaintiffs are set forth in the Notice to Conform separately filed by each Plaintiff. Plaintiffs hereby allege, upon information and belief, as follows:

## I. INTRODUCTION

1. The events giving rise to this Complaint are part of a decades-long history of E. I. du Pont de Nemours and Company's discharges of toxic chemicals into the Cape Fear River with blatant disregard for the effects on consumers downstream. As has been widely reported, Du Pont, and its successor Chemours, used the River as the dumping ground for countless chemicals while assuring the E.P.A. and state agencies that they were doing no such thing. Plaintiffs are public water providers that have suffered extensive property damage to their water supply, raw water, water treatment systems, and/or water distribution systems. Plaintiffs sue to recover, among other things, the costs of removing these chemicals from drinking water before it is served to the public.

2. DuPont in fact has a long history of toxic chemical liabilities arising from perfluoroalkyl substances (PFASs) such as the biopersistent, bioaccumulative, toxic chemical PFOA[1] also known as "C8."[2] DuPont began using C8 in 1951 to make consumer products including the immensely popular Teflon® non-stick cookware and continued to use it profitably for decades. When DuPont's supplier, the 3M Company, came under increasing scrutiny from the United States Environmental Protection Agency and decided to stop making C8, DuPont began producing C8 at the Fayetteville Works facility on the Cape Fear River in North Carolina, assuring regulators and the public that all C8 wastewater would be contained and disposed of elsewhere, and that C8 presented no threat to human health or the environment. Only when residents near DuPont's manufacturing plant in Parkersburg, West Virginia began to pursue litigation over DuPont's contamination of the Ohio River with C8 did evidence begin to emerge of DuPont's internal knowledge of C8's health hazards, which DuPont had concealed from the E.P.A. Mounting evidence, thousands of civil lawsuits, epidemiological studies, and federal agency pressure—including the largest environmental administrative penalty ever imposed by the E.P.A.—eventually forced DuPont to begin phasing out C8 in 2006.

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[1] Perfluorooctonic acid, CAS No. 335-67-1.

[2] "C8" refers to the eight-carbon chain in the perfluorinated molecule of PFOA. The term "C8" also includes the ammonium salt of PFOA, known as "APFO", which is dissolved by water into PFOA and ammonium.

3. To keep producing its highly profitable fluoroproducts, DuPont turned to an alternative perfluorinated chemical—dubbed "Gen X"—which DuPont also planned to manufacture at the Fayetteville Works facility. To obtain the necessary approvals and permits, DuPont assured state and federal regulators that Gen X would not be released into the Cape Fear River—even though DuPont knew that it had secretly been releasing Gen X into the river since at least 1980 (and planned to continue doing so). DuPont understood that regulators were concerned about the hazards of perfluorinated chemicals such as C8 and Gen X, and had data from its own studies to demonstrate Gen X's toxicity in animals, but remained silent about its ongoing contamination of the drinking water supply for hundreds of thousands of North Carolinians. Instead, in a familiar refrain, DuPont maintained that Gen X presented no threats to human health or the environment. DuPont's repugnant act of deception worked, and in 2009, commercial production of Gen X began at the Fayetteville Works, where DuPont also continued to manufacture C8 until at least 2013.

4. Meanwhile, by 2011, DuPont could no longer credibly deny the toxicity of C8 because an independent scientific panel created to help settle a class action over DuPont's Ohio River contamination had begun to release a series of reports linking C8 exposure to various serious health effects in humans. Facing thousands of pending personal injury lawsuits, DuPont became desperate to spin off its C8 liabilities. By mid- 2015, DuPont had dumped its perfluorinated chemical liabilities into the lap of a new and apparently undercapitalized entity, Defendant Chemours Company, which *Fortune* magazine described as "[l]oaded up with debt and stuffed full of potentially toxic assets…[and] seen by many investors as a listing garbage scow locked on a one-way course to the bottom of the ocean" due to the C8 liability that "now sits on its balance sheet like a ticking time bomb."[3] By 2017, over 3,500 civil lawsuits had been filed against DuPont for C8 contamination of the Ohio River and the drinking water of nearly 70,000 residents in and around Parkersburg, West Virginia. All told, DuPont and Chemours will pay over $1 billion to resolve the C8 liabilities related to Ohio River contamination.

[3] http://fortune.com/2016/05/18/how-dupont-spinoff-chemours-came-back-from-the-brink/ (last viewed on January 28, 2018).

5. As a result of the 2015 spin-off, Chemours now owns the Fayetteville Works facility, where it continues to lease manufacturing space to DuPont and to produce a variety of products including Gen X. In November 2016, environmental scientists published the results of water testing that showed high levels of Gen X in the Cape Fear River downstream of the Fayetteville Works, at the intake for the raw water that is used to generate drinking water for thousands of North Carolinians. Worse, their results showed that conventional water treatment technologies do not effectively remove such chemicals from drinking water. Confronted by state regulators, Chemours finally admitted that DuPont had been releasing Gen X into the Cape Fear River since at least 1980—a fact long concealed from the State of North Carolina. Sampling along the Cape Fear River confirms that Defendants have been contaminating the Cape Fear River and the public drinking water systems that draw from the river downstream of the Fayetteville Works facility with a variety of undisclosed byproducts—including Nafion® Byproducts 1 and 2 ("C7")[4], Gen X ("C6"), and other perfluoroalkyl substances known as PFECAs (perfluoroalkyl ether carboxylic acids)—through wastewater, groundwater, and/or air deposition. Contamination of the Cape Fear River with Gen X alone has well exceeded North Carolina's temporary health standard and has repeatedly been found at levels considered to be unsafe. And Gen X is only *one* of the PFASs that Defendants have knowingly released into the region's public drinking water supply for decades. DuPont (and now Chemours) uses PFASs to manufacture a wide range of products, resulting in the production of hundreds (if not thousands) of different PFAS chemicals—and the identity of the PFASs that enter the environment due to this process remains unknown to regulators and the public. While public attention has focused on C8, and now Gen X, these discharges merely scratch the surface of what may be contained in the rivers and waterways Defendants have been polluting.

6. Chemours, however, vows to handle its toxic liabilities differently than DuPont. Chemours' Code of Conduct: A Guide to Our Values explains that "Unshakeable Integrity" is one of Chemours' five values. Chemours' Code of Conduct vows to "do what's right for customers,

[4] "C6" and "C7" refer to the number of carbons in the perfluorinated molecules.

colleagues, and communities—always."[5] Chemours' Code of Conduct explains "our values are simple yet powerful, and our focus on delivering efficiency and results for our customers never overshadows our commitment to ethical behavior in all we do. When we do what's right for our people, customers, shareholders, and communities, success will follow."[6]

7. Mark Newman, Chemours' Senior Vice President and Chief Financial Officer says "Whether it's about being open and clear about our performance or our stewardship practices, our goal is to be brave and do the right thing, always."[7] Paul Kirsch, Chemours' Fluoroproducts President says, "When we do what's right for our customers, shareholders, and communities, we are confident success will follow."[8]

8. *For nearly forty years*, Defendants have been secretly releasing their persistent, bioaccumulative, and toxic perfluorinated chemicals into the Cape Fear River at unsafe levels and contaminating the drinking water source for hundreds of thousands of North Carolinians—just as they did in the Ohio River—all the while misleading state and Federal regulators and the public. Plaintiffs are governmental entities that serve thousands of North Carolina residents whose public drinking water supply has been contaminated by Defendants' PFASs for decades. Plaintiffs seek to recover the costs—past, present, and future—necessary to manage and remove Defendants' perfluorinated chemicals from their public drinking water supply.

## II. PARTIES

9. Plaintiffs are public water suppliers and/or governmental entities as set forth in the Notice to Conform separately filed by each Plaintiff.

10. Defendant DOWDUPONT, INC. ("DowDuPont") is a Delaware corporation with two principal places of business, including in Midland, Michigan and Wilmington, Delaware.

11. Defendant E.I. DU PONT DE NEMOURS AND COMPANY ("DuPont") is or was a Delaware corporation with its principal place of business in Wilmington, Delaware, and is registered

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[5] Chemours' *Code of Conduct: A Guide to Our Values* https://s2.q4cdn.com/107142371/files/doc_downloads/governance/2017/code-of-conduct-en-us.pdf (last viewed on January 28, 2018)

[6] *Id.*

[7] *Id.*

[8] *Id.*

to do business as a foreign corporation in the State of North Carolina. DuPont owned and operated the Fayetteville Works facility from approximately 1971 until 2015 and currently leases a portion of the site from Defendant Chemours Company FC, LLC. As of August 31, 2017, a $130 billion merger between Dow Chemical and DuPont was completed. Plaintiffs are unaware what, if anything, remains of DuPont outside of the merger with Dow Chemical.

12. Defendant THE CHEMOURS COMPANY is a Delaware corporation with its principal place of business in Wilmington, Delaware, and is registered to do business as a foreign corporation in the State of North Carolina.

13. Defendant THE CHEMOURS COMPANY FC, LLC is a Delaware limited liability corporation with its principal place of business in Wilmington, Delaware, and is registered to do business as a foreign corporation in the State of North Carolina. THE CHEMOURS COMPANY FC, LLC currently owns and operates the Fayetteville Works Facility, located at 22828 NC Highway 87 W., Fayetteville, North Carolina. THE CHEMOURS COMPANY FC, LLC is a subsidiary of THE CHEMOURS COMPANY and the two entities are referred to in this Complaint as "Chemours."

## III. JURISDICTION AND VENUE

14. This Court has jurisdiction pursuant to 28 U.S.C. §1332 because complete diversity exists between the Plaintiffs and the Defendants. The Plaintiffs are located in North Carolina, but no Defendant is a citizen of North Carolina. Defendants are incorporated and maintain principal places of business in locations other than North Carolina, as outlined above.

15. Venue is appropriate in this judicial district pursuant to 28 U.S.C. §1391(a) because a substantial part of the property that is the subject of the action is situated in this judicial district and division.

## IV. FACTUAL ALLEGATIONS

### A. Historical Background.

16. From 1951 through 2002, DuPont purchased the perfluorinated chemical PFOA (also known as "C8") from the 3M Company and used it to make a variety of "fluoroproducts," including the immensely-popular Teflon® nonstick cookware, at its Washington Works plant near Parkersburg, West Virginia.

17. C8 is a perfluorinated chemical that is toxic to human health, biopersistent, and bioaccumulative—characteristics DuPont concealed for decades.

18. Although both 3M and DuPont had found C8 in blood samples from their own employees, and DuPont had itself been studying its potential toxicity since at least the 1960s and knew that it was contaminating drinking water drawn from the Ohio River, neither company disclosed to the public or to government regulators what they knew about the substance's potential effects on humans, animals, or the environment.[9]

19. In 1999, the first of thousands of civil lawsuits was filed as a result of DuPont's contamination of the Ohio River, questioning the environmental and health effects of C8. The civil lawsuit—and the internal corporate knowledge it revealed—triggered an investigation by the U.S. E.P.A. of the toxicity of C8.

20. In the face of growing pressure by the E.P.A. over widespread risks to human health and the environment posed by C8, 3M began to phase out the manufacturing of C8 in 2000. That year, DuPont made an estimated $200 million in after-tax profits from products manufactured with C8.[10]

21. In May 2002, 3M announced that it would cease to manufacture C8 altogether. In October 2002—so that it could continue manufacturing a range of profitable Teflon® products—DuPont began making C8 at its Fayetteville Works facility—upstream of Plaintiffs—and shipping C8 waste to its Chambers Works plant in New Jersey, for disposal into the waters of the Delaware River and Delaware Bay. DuPont publicly maintained that disposing of C8 into the waters there posed no environmental risks, and that there was "no evidence" C8 causes adverse human health effects.[11]

22. By December 2005, the E.P.A. uncovered evidence that DuPont concealed the environmental and health effects of C8, and the E.P.A. announced the "Largest Environmental Administrative Penalty in Agency History."[12] The E.P.A. fined DuPont for violating the Toxic

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[9] *See, e.g.,* Fred Biddle, "DuPont confronted over chemical's safety," *Wilmington News Journal* (Apr. 13, 2003). The *Wilmington News Journal* is published in Wilmington, Ohio.

[10] See Biddle, *supra* note 9.

[11] See Biddle, *supra* note 9.

[12] $16.5 million.

Substances Control Act "Section 8(e)—the requirement that companies report to the E.P.A. substantial risk information about chemicals they manufacture, process or distribute in commerce."[13]

23. Thereafter in 2006, the E.P.A. began a voluntary PFOA Stewardship Program, in which DuPont participated, designed to prevent C8 from further entering the environment and to eliminate C8 from consumer products by 2015. At that time, DuPont identified another perfluorinated chemical—PFPrOPrA[14] or "Gen X"—that could be used as an alternative to C8.

24. By 2009, DuPont negotiated with the E.P.A. to manufacture Gen X at DuPont's Fayetteville Works facility in North Carolina—the same plant where DuPont had continued the manufacture of C8 despite incriminating evidence of C8's environmental and health effects. The E.P.A. "determined that the chemical could be commercialized *if there were no releases to water*."[15]

25. Meanwhile, by July 2011, DuPont could no longer credibly dispute the human toxicity of C8, which it continued to manufacture at the Fayetteville Works facility. The "C8 Science Panel" created as part of the settlement of a class action over DuPont's releases from the Washington Works plant had reviewed the available scientific evidence and notified DuPont of a "probable link"[16] between C8 exposure and the serious (and potentially fatal) conditions of pregnancy-induced hypertension and preeclampsia.[17] By October 2012, the C8 Science Panel had notified DuPont of a probable link between C8 and five other conditions—high cholesterol, kidney cancer, thyroid disease, testicular cancer, and ulcerative colitis.

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[13] U.S.Envtl. Prot. Agency, Reference News Release, "EPA Settles PFOA Case Against DuPont for Largest Environmental Administrative Penalty in Agency History" (Dec. 14, 2005), https://www.epa.gov/enforcement/reference-news-release-epa-settles-pfoa-case-against-dupont-largest-environmental (last viewed on January 30, 2018).

[14] Perfluoro-2-propoxypropanoic acid, CAS No. 13252-13-6. Defendants also refer to PFPrOPrA's ammonium salt, CAS No. 620337-80-3, as Gen X.

[15] Vaughn Haugherty, "Toxin taints CFPUA drinking water," *StarNews* (June 8, 2017), http://www.starnewsonline.com/news/20170607/toxin-taints-cfpua-drinking-water/1 (emph. added) (last viewed on January 28, 2018).

[16] Under the settlement, "probable link," means that given the available scientific evidence, it is more likely than not that among class members a connection exists between PFOA/C8 exposure and a particular human disease.

[17] *See* The C8 Science Panel, *Status Report: PFOA (C8) exposure and pregnancy outcome among participants in the C8 Health Project* (July 15, 2011), http://www.c8sciencepanel.org/pdfs/Status_Report_C8_and_pregnancy_outcome_15July2011.pdf (last viewed on January 28, 2018).

26. By April 28, 2013,[18] in accordance with E.P.A.'s PFOA Stewardship Program, Defendants reported they had phased out the intentional manufacture of C8 at the Fayetteville Works facility, instead manufacturing "Gen X" as an alternative product to use in making Teflon®.

27. As DuPont's C8 liabilities mounted, DuPont became desperate to reduce its perfluorinated chemical liabilities and decided to spin-off its perfluorinated chemical operations into a new company. In July 2015, E.I. du Pont de *Nemours* spun off its *chemicals* division, creating *Chemours*, a new publicly-traded company named The Chemours Company, once wholly owned by DuPont. By mid- 2015, DuPont had dumped its perfluorinated chemical liabilities into the lap of the new Chemours Company.

28. In May 2016, *Fortune* magazine wrote, "When industrial giant DuPont spun off its performance chemicals division in July 2015, few gave the orphaned appendage much hope. Loaded up with debt and stuffed full of potentially toxic assets—on multiple levels—the new company, re-branded as Chemours, was seen by many investors as a listing garbage scow locked on a one-way course to the bottom of the ocean." "So while Chemours products made up around a fifth of DuPont's overall sales when it was spun off, it ended up inheriting nearly two-thirds of its environmental liabilities. Pending lawsuits linked to a chemical used in making Teflon, one of Chemours' biggest products, now sits on its balance sheet like a ticking time bomb, threatening to wipe out millions of dollars from the company's coffers over the next few years."[19]

29. By 2017, over 3,500 civil lawsuits had been filed against DuPont for C8 contamination of the Ohio River and the drinking water of nearly 70,000 residents in and around Parkersburg, West Virginia. DuPont had settled the first round of civil cases for nearly $350 million in 2001, resolving water filtration claims, and funding epidemiological health studies of the nearly 70,000 residents. Then, in February 2017, DuPont and Chemours settled the second round of cases for nearly $671 million, resolving thousands of personal injury claims for exposure to C8 via drinking water drawn from the contaminated Ohio River. All told, DuPont and Chemours will pay over $1 billion to resolve the C8 liabilities related to Ohio River contamination.

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[18] *See* "Corrective Measures Study Work Plan," Chemours Fayetteville Works, RCRA Permit No. NCD047368642-R2-M3, PARSONS, December 2016 (hereinafter, "Parsons").

[19] http://fortune.com/2016/05/18/how-dupont-spinoff-chemours-came-back-from-the-brink/

30. As of 2017, and as a result of the 2015 Chemours spin-off, Defendant Chemours Company FC, LLC, now owns and operates the Fayetteville Works facility, leasing space to two other chemical manufacturers, Defendant DuPont/DowDuPont, Inc. and non-party Kuraray America, Inc.

31. At the Fayetteville Works facility, DuPont and Chemours have long made, used, and/or generated a variety of toxic perfluoroalkyl substances that are structurally and functionally similar, including C8, Gen X ("C6"), "Nafion Byproducts 1 and 2" ("C7")[20], and other perfluorinated chemicals known as PFECAs (perfluoroalkyl ether carboxylic acids).

**B. The Fayetteville Works Site.**

32. The Fayetteville Works facility ("the Site") is located at 22828 NC Highway 87 W, near Duart Township in Bladen County, North Carolina. The Site is located 15 miles southeast of the City of Fayetteville on NC Highway 87, south of the Bladen-Cumberland county line. Its geographic location is 34°50'30" north latitude, 78°50'00" west longitude. The Site contains 2,177 acres of relatively flat undeveloped open land and woodland bounded on the east by the Cape Fear River, on the west by NC Highway 87, and on the north and south by farmland.[21]

33. DuPont purchased the Site property in parcels from several families in 1970. The Site's first manufacturing area was constructed in the early 1970s. Currently, the Site manufactures plastic sheeting, safety glass, fluorochemicals, and intermediates for plastics manufacturing. A former manufacturing area, which was sold in 1992, produced nylon strapping and elastomeric tape.[22]

34. In July 2015, Defendant Chemours Company FC, LLC, became the owner of the entire 2,177 acres of the Fayetteville Works along with Fluoromonomers, Nafion® membranes, and PPA manufacturing units. The polyvinyl fluoride (PVF) resin manufacturing unit remained with the DuPont Company.[23]

35. Defendants' manufacturing operations at the Site[24] consist of three current perfluorinated chemical ("PFC") manufacturing areas and a former manufacturing area:[25]

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[20] "C6" and "C7" refer to the number of carbons in the perfluorinated molecules.
[21] Parsons, *supra* note 18.
[22] *Id.*
[23] *Id.*
[24] In two additional manufacturing areas at the Fayetteville Works, Kuraray America manufactures Butacite polyvinyl butyral sheeting and resin, and SentryGlass-branded safety glass products, but upon information and belief does not use or generate the polyfluorinated chemicals at issue.

a. Chemours Fluoromonomers and Nafion® Membrane - Manufactures Nafion® fluoropolymer membrane—a perfluorosulfonic acid (PFSA) membrane—for use in electronic cells, as well as various fluorochemicals used for Nafion® membrane, Teflon® fluoropolymer, Viton® elastomers, and other fluorinated products.

b. Chemours Polymer Processing Aid (PPA) - Manufactures a fluorochemical that is used as a processing aid for off-site fluoropolymer manufacturing—upon information and belief, the product known as "GenX." This area formerly manufactured ammonium perfluorooctanoate (APFO, the ammonium salt of PFOA, which is also known as "C8"). Chemours publicly maintains that the last date of C8 production at the Site was April 28, 2013, and that the C8 manufactured in this area was never used in any of the other manufacturing facilities at the Site.

c. DuPont Company PVF - Manufactures polyvinyl fluoride (PVF) resin used to produce Tedlar® film.

d. The Polymer Manufacturing Development Facility (PMDF) - Manufactured Teflon® fluorinated ethylene propylene (FEP) for electrical wiring insulation and other applications. Since the PMDF unit was permanently shut down in June 2009, it no longer manufactures DuPont Teflon®. Chemours publicly maintains that the site did not use C8 in its processes.

36. In addition to the manufacturing operations at the Site, Chemours operates two natural gas-fired boilers and a wastewater treatment plant for the treatment of process and sanitary wastewaters from Chemours and DuPont. Hazardous wastes generated from the Chemours manufacturing processes and laboratories were, as of 2016, managed at the permitted Hazardous Waste Container Storage Area, in four permitted hazardous waste tanks, and at the 90-day ignitable waste accumulation area prior to being shipped offsite for treatment, disposal, or recycling.[26]

37. The Cape Fear River is located along the eastern property boundary of the Site, approximately 1,850 feet from the eastern portion of the manufacturing area. Willis Creek, a tributary

[25] *Id.*
[26] *Id.*

of the Cape Fear River, is located in the northern portion of the Site, approximately 3,000 feet from the manufacturing area. Portions of Georgia Branch, another tributary to the Cape Fear River, flow along the southern boundary of the Site approximately 1 mile southwest of the manufacturing area. A drainage channel leading to the Cape Fear River is located just south of the plant area and is used as the outfall area ("Outfall 2") covered by National Pollutant Discharge Elimination System Permit No. NC003573 (the "NPDES Permit").[27]

38. Underneath the Site, groundwater flow is generally west-southwest to east-northeast, discharging into the Cape Fear River. This groundwater travels at a rate of 217 feet per year, resulting in an estimated travel time of approximately 15.5 years from the Chemours Polymer Processing Aid area (where Defendants manufactured C8 and later Gen X) to the Cape Fear River.[28]

39. Upon information and belief, the Site also has at least one stack that has operated over the years as a source for airborne emissions of perfluoroalkyl substances, thereby giving rise to additional water contamination when airborne particles are deposited on land and surface waters and dissolve and/or leach into soil, groundwater, and surface waters. Plume modeling conducted in 2002 by DuPont Engineering[29] demonstrates that DuPont's C8 manufacturing processes would give rise to an airborne PFOA (C8) plume with a "hot spot" directly over Willis Creek, which flows into Cape Fear River.

**C. Defendants' Pollution of the Cape Fear River.**

40. In 1980—unbeknownst to state or federal regulators or the public—DuPont began to release Gen X (C6) at the Fayetteville Works site as a byproduct of one or more of its manufacturing processes there, including, upon information and belief, a vinyl ether manufacturing process. At a point in time that is as yet unknown, DuPont also began to release other perfluoroalkyl substances (in addition to Gen X) from the Fayetteville Works site, including PFOA (C8), Nafion® Byproducts 1 and 2 (C7) and other perfluorinated chemicals known as PFECAs.[30] Indeed, upon information and belief, there are *hundreds* of different PFASs generated in the manufacturing processes at Fayetteville

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[27] *Id.*
[28] *See id.*
[29] *See* DuPont Engineering Technology, "Exposure Evaluation for New Process at Fayetteville Site" (Aug. 20, 2001, rev. Feb. 20, 2002).
[30] Perfluoroalkyl ether carbolocylic acids, a type of perfluoroalkyl substances that includes Gen X.

Works, and an unknown number of these have also been discharged into the facility's waste streams and into the Cape Fear River.[31]

41. Defendants were required to obtain a NPDES Permit from the State of North Carolina before making an outlet into the Cape Fear River, or causing or permitting any waste to be directly or indirectly discharged into waters of the state in violation of any State water quality standards or point source effluent standards or limits. *See* 33 U.S.C. §§ 1311, 1342; N.C. Gen Stat. § 143-215.1.

42. In 1987, DuPont obtained its initial NPDES Permit No. NC003573 from the State of North Carolina,[32] authorizing the release of wastewaters from the facility wastewater treatment plant through Outfall 002, which feeds into the Cape Fear River. Upon information and belief, DuPont did not disclose to the State that it planned to discharge Gen X, C8, or any other perfluoroalkyl substances to the Cape Fear River, nor did it disclose the number, variety or identity of the many PFAS chemicals generated in its processes and found in its waste streams.

43. The segments of the Cape Fear River impacted by discharges from Outfall 002 include segments classified by the State of North Carolina as Class WS-IV and Class WS-IV CA (critical area). The designated uses in these segments include "source of water supply for drinking, culinary, or food-processing purposes" as well as "aquatic life propagation and maintenance of biological integrity (including fishing and fish), wildlife, secondary recreation, [and] agriculture," 15A N.C.A.C. 2B.0211(1), 2B.0216(1); *see also* 15A N.C.A.C. 2B.0101; N.C. Gen. Stat. § 143-214.1(b). "Critical area means the area adjacent to a water supply intake or reservoir where risk associated with pollution is greater than from the remaining portions of the watershed." 15A N.C.A.C. 2B .0202(20).

44. Upon information and belief, DuPont's (and now Chemours') on-site wastewater treatment plant is ineffective at removing Gen X and other perfluoroalkyl substances (PFASs) in the water that is discharged into the Cape Fear River.

45. In 1995, DuPont asked the State of North Carolina for permission to reroute wastewater from its Nafion® manufacturing area to bypass the facility wastewater treatment plant. At this time,

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[32] At the time, the regulating entity was known as the North Carolina Department of Environment & Natural Resources, Division of Water Quality. It is now known as the Department of Environmental Quality (DEQ), Division of Water Resources (DWR).

upon information and belief, DuPont knew that the wastewater it planned to discharge contained Gen X and other PFAS byproducts of the Nafion® manufacturing process. Although DuPont had a duty under North Carolina law and federal law to clearly identify in its NPDES permit application any potential toxins, the only waste DuPont disclosed was fluoride. Upon information and belief, the request to release Nafion® process wastewater directly into the Cape Fear River was authorized in DuPont's 1996 NPDES Permit renewal.

46. In May 2001, following 3M Company's announcement that it would no longer manufacture C8, DuPont submitted an NPDES Permit renewal application to the State of North Carolina stating that it intended to begin manufacturing C8 at the Fayetteville Works Site. DuPont represented to the State that C8 does not pose a health concern to humans or animals at the levels present in the workplace or environment, that DuPont had used C8 for forty years with no observed health effects, and that C8 is neither a known developmental toxin nor a known carcinogen. DuPont requested authorization to discharge wastewater from its C8 operations directly to a dedicated outfall, without sending it through the facility's wastewater treatment plant. At this time, DuPont did not disclose that its manufacturing processes at the Fayetteville Works site in fact generated hundreds of PFASs, nor did it disclose the number, variety or identity of the PFASs found in its waste streams.

47. In October 2002—before the State granted the requested NPDES Permit renewal—DuPont began making C8 at the Fayetteville Works site. In January 2004, the State granted the renewed NPDES permit—without authorizing the requested discharge of the C8 manufacturing wastewater into the Cape Fear River.

48. DuPont applied for its next NPDES renewal permit on May 1, 2006. DuPont's application represented that wastewater from the C8 manufacturing operations "is collected and shipped off-site for disposal"; that no process wastewater is discharged to the Site's wastewater treatment plant or to the Cape Fear River; and that none of the produced C8 is used at the Fayetteville Works site. DuPont further represented that wastewater from the Nafion® operations was being treated in the facility's wastewater treatment plant. Upon information and belief, DuPont did not disclose that it was releasing any C8, Gen X or other PFECAs, or other perfluoroalkyl byproducts of

its Nafion® operations, into the Cape Fear River. Nor did DuPont disclose the number, variety or identity of the PFAS chemicals generated in its processes and found in its waste streams.

49. The State granted a renewed NPDES permit on May 25, 2007. Under this permit, DuPont was required to capture and dispose of all C8 process water off-site, and also to monitor for C8 due to known groundwater contamination. The resulting monitoring reports document discharges and/or releases of C8 into the Cape Fear River through at least March 2017, when Chemours reported PFOA (C8) discharges of 10,000 parts per trillion (ppt) through Outfall 002. Indeed, even after Chemours reportedly stopped making C8 at the Fayetteville Works site in 2013, regular discharges of C8 at Outfall 002 continued, reaching as high as 160,000 ppt in October 2016, despite dilution of the effluent with non-contact river water.[33]

50. On January 28, 2009, DuPont entered into a consent order with the E.P.A governing the manufacturing of Gen X. The consent order acknowledged that E.P.A. "has concerns that [Gen X] will persist in the environment, could bioaccumulate, and be toxic . . . to people, wild animals, and birds." The consent order also acknowledged E.P.A.'s "human health concerns" about Gen X, including that "uncontrolled . . . disposal of [Gen X] may present an unreasonable risk of injury to human health and the environment." The order required DuPont to "recover and capture (destroy) or recycle [Gen X] at an overall efficiency of 99% from all of the effluent process streams and the air emissions (point source and fugitive)." In negotiating the Consent Order, upon information and belief, neither DuPont (nor, apparently, its lawyers) disclosed to the E.P.A. that DuPont had been releasing Gen X (and other related PFASs) into the Cape Fear River from the Fayetteville Works site since at least 1980. And once more, DuPont remained silent about the number, variety and identity of the PFAS chemicals generated in its processes and found in its waste streams.

51. Upon information and belief, DuPont met with North Carolina regulators in August 2010 and represented (1) that—like C8—GenX would be produced in a "closed-loop" system that would not result in the discharge of GenX into the Cape Fear River; and (2) that the wastewater

[33] *See* ICIS Detail Report for NPDES Permit No. NC0003673 based on data extracted based on data extracted on June 28, 2017, available at https://iaspub.epa.gov/enviro/ICIS_DETAIL_REPORTS_NPDESID.icis_tst?npdesid=NC0003573&npvalue=1&npvalue=13&npvalue=14&npvalue=3&npvalue=4&npvalue=5&npvalue=6&rvalue=13&npvalue=2&npvalue=7&npvalue=8&npvalue=11&npvalue=12 (last viewed on January 28, 2018).

generated from GenX manufacturing would be collected and shipped off-site for disposal. DuPont did not disclose to the State that it had already been discharging GenX or other PFECAs, or other perfuoroalkyl byproducts from its Nafion® processes into the Cape Fear River. Nor did DuPont disclose to regulators the number, variety and identity of the PFAS chemicals generated in its processes and found in its waste streams.

52. The following year, in April 2011, DuPont applied for a renewal of its NPDES Permit, confirming that "all process wastewater generated from [the PPA Manufacturing Area where DuPont produced C8 and GenX] is collected and shipped offsite for disposal" and "no process wastewater from this manufacturing facility is discharged to the site's biological [wastewater treatment plant] or to the Cape Fear River." DuPont continued to mislead regulators, failing to explain that the Fayetteville Works operations had been contaminating the Cape Fear River with PFASs such as Gen X and Nafion® Byproducts 1 and 2 since approximately 1980, and failing to disclose the number, variety or identity of the PFAS chemicals generated in its processes and found in its waste streams, even though DuPont knew that regulators had serious concerns about the effects of these substances on human health and understood that its discharges were contaminating the drinking water used by hundreds of thousands of North Carolinians. In fact, at the very same time DuPont was reassuring the State about its "closed system" for manufacturing Gen X, upon information and belief, DuPont was discharging Gen X and other perfluoroalkyl byproducts of its Nafion® manufacturing processes into the Cape Fear River on an ongoing basis.

53. On February 6, 2012, the State of North Carolina issued the NPDES renewal permit to DuPont, and transferred the permit to Chemours on October 28, 2015. The Permit does not authorize any discharges of Gen X or other PFECAs or other perfluoroalkyl substances (including perfluoroalkyl byproducts of the Nafion® processes from the Fayetteville Works site).

54. DuPont conducted a Resource Conservation and Recovery Act Facility Investigation (RFI), in three phases from 2001 through 2014. The RFI identified widespread C8 contamination in the soil and groundwater at the Fayetteville Works site, some of which DuPont attributed to its past Nafion® manufacturing activities, including a "historical release originating from the Nafion®

manufacturing area's common process wastewater sump."[34] The RFI also documented at least seven releases of PFASs at the Fayetteville Works site between March 2011 and February 2013.

55. In 2015, State regulators required Chemours to perform additional groundwater sampling to determine if groundwater flowing from the Fayetteville Works site was contaminating the Cape Fear River with C8 or other PFASs. Chemours still did not disclose to regulators that the Fayetteville Works operations had been contaminating the Cape Fear River with PFASs such as Gen X and Nafion® Byproducts 1 and 2 since approximately 1980. Upon information and belief, Chemours identified both C8 and other PFASs in its ground water, but only disclosed to the State (at the time) that it had found C8.

56. In June 2015, DuPont's environmental manager met with State regulators to discuss a "new" perfluorinated compound, Gen X, which had been identified in the Cape Fear River by a team of researchers conducting sampling on the Cape Fear River as part of a study commissioned by EPA. Upon information and belief, DuPont at that meeting represented to DWQ that Gen X was C8's replacement, and that it was not being discharged to the Cape Fear River.

57. At least by 2015, and reportedly by April 2013, Defendants ceased manufacturing C8 at the Fayetteville Works site. Manufacturing of Gen X and fluoroproducts such as Nafion® perfluorosulfonic acid (PFSA) membrane, however, has continued.

58. At all relevant times, Defendants knew, or should have known, that the perfluoroalkyl substances they were releasing into the environment created a probable risk to human health in the public drinking water supply drawn from the Cape Fear River, due to the persistence and toxicity of these substances and the fact that they are not removed through conventional water treatment processes.

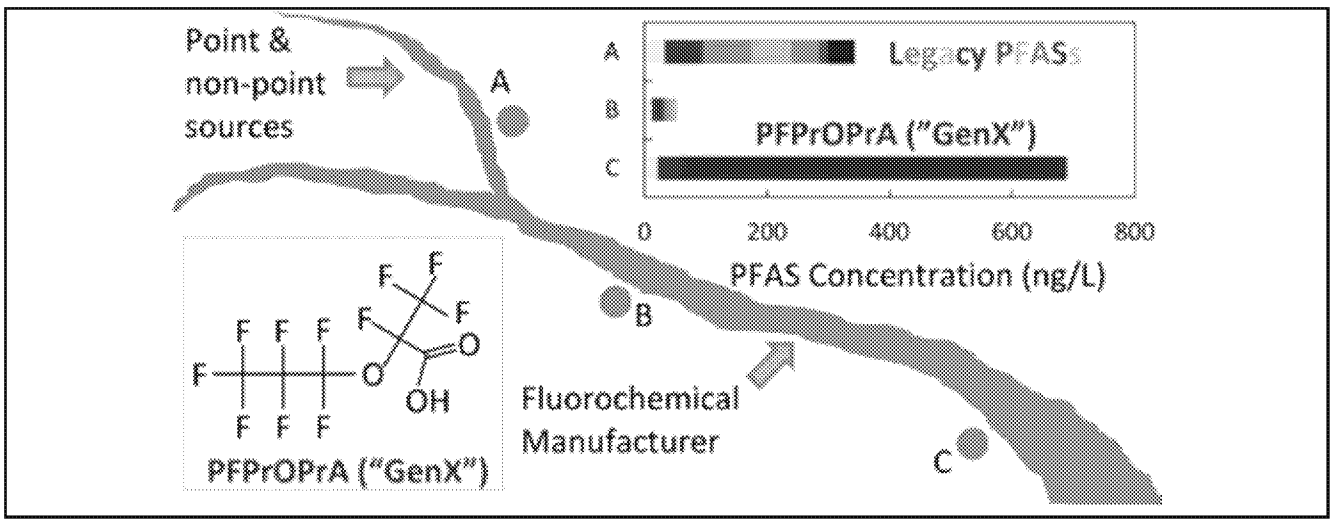
**D. Public Disclosure of Defendants' Pollution.**

59. In November 2016, Dr. Detlef Knappe of North Carolina State University and a team of researchers from other institutions published a study that identified GenX and other PFASs at the

[34] DuPont Fluoroproducts, "Biennial Report for the Manufacture of APFO Calendar Years of 2002 and 2003, DuPont Company —Fayetteville Works," submitted October 26, 2004 in U.S. E.P.A. Docket No. AR-226.

King's Bluff intake site in the Cape Fear River.[35] Between June 14, 2013 and December 2, 2013 Dr. Knappe's team had taken daily samples of raw water downstream of the Fayetteville Works site at the King's Bluff intake, and at two locations upstream of the Fayetteville Works site. While upstream sampling revealed only the presence of so-called "legacy PFASs,"[36] at King's Bluff, Dr. Knappe's team found concentrations of Gen X as high as 4,500 parts per trillion ("ng/L" or "ppt"), with a mean (average) concentration of Gen X of 631 ppt—both well in excess of the current state health goal of 140 ppt.

**Average concentration in drinking water source (ng/L)**




Source: Mei Sun, et al., "Legacy and Emerging Perfluoroalkyl Substances are Important Drinking Water Contaminants in the Cape Fear Watershed of North Carolina," 3 *Environ. Sci. Technol. Let.* 415 (2016).

Dr. Knappe's team also detected significant concentrations of six other PFECAs at King's Bluff.

60. DuPont reportedly installed new abatement technology in November 2013, that the company claimed would "dramatically drop" the average Gen X levels in the Cape Fear River. Dr. Knappe's 2016 article reports, however, that additional samples taken in August 2014 showed similar levels of Gen X to the mean concentrations he had found in August 2013 (again, in excess of the current North Carolina state health advisory standard) as well as a high concentration of other PFECAs at levels that are believed to be unsafe for humans.

[35] Mei Sun, et. al, "Legacy and Emerging Perfluoroalkyl Substances are Important Drinking Water Contaminants in the Cape Fear Watershed of North Carolina," 3 *Environ. Sci. Technol. Let.* 415 (2016).

[36] E.g., PFASs that had been phased out through the E.P.A.'s voluntary PFOA Stewardship Program.

61. Dr. Knappe further reported that based on an analysis taken at every stage of the water treatment process at the Sweeney Water Treatment Plant in Wilmington, North Carolina, PFASs in the Cape Fear River were not effectively removed by the coagulation, ozonation, biofiltration, sedimentation, or disinfection processes ordinarily used by water providers such as Plaintiffs to treat drinking water.[37]

62. On June 15, 2017, representatives of Chemours met with officials from state and local agencies and represented that the GenX compound found in the Cape Fear River was not due to discharge from the plant making GenX but was likely a byproduct of another manufacturing process conducted at the Fayetteville Works site *since 1980*. Upon information and belief, these discharges exceeded the current state health goal of 140 ppt and occurred at levels believed to be unsafe for human consumption.

63. In July 2017, upon information and belief, Chemours admitted to State regulators that its 2015 groundwater sampling had also revealed the presence of PFASs other than C8 at the Fayetteville Works site.

64. In August 2017, the State requested additional groundwater sampling at the Fayetteville Works site, which demonstrated the presence of Gen X at 13 of 14 sampling locations, at levels greater than the practical quantitation limit (PQL) of 10 ng/L (ppt). Levels of Gen X in groundwater monitoring wells at the site show Gen X at concentrations from 519 to 61,300 ppt—vastly exceeding both the PQL and the current state health goal of 140 ppt. Five wells adjacent to the Cape Fear River have Gen X concentrations in excess of 11,800 ppt.

65. In August 2017, the E.P.A. confirmed the presence of additional byproducts of Defendants' Nafion® manufacturing processes, described as PFESA[38] Byproduct No. 1 and PFESA Byproduct No. 2 (and referred to in this Complaint as Nafion® Byproduct Nos. 1 and 2), at an outfall where Defendants' wastewater is discharged into the Cape Fear River. In particular, even after Chemours allegedly took undisclosed steps to reduce its PFAS releases from the Fayetteville Works site, the E.P.A. found levels of Nafion® Byproduct No. 1 (CAS No. 29311-67-9) as high as 15,800

[37] Mei Sun, et. al, *supra* note 35.

[38] Per- or polyfluoroalkyl ether sulfonic acids. Neither DuPont nor Chemours had disclosed that these substances were present in the Fayetteville Works effluent.

ppt, and Nafion® Byproduct No. 2 (CAS No. 749836-20-2) as high as 73,900 ppt, despite Chemours' continued dilution of its effluent with large volumes of non-contact river water.

66. All of the PFAS chemicals found in the Cape Fear River—including Gen X, and PFESA Byproduct No. 1 and PFESA Byproduct No. 2—have been consistently found at levels that far exceed the E.P.A.'s health standards for PFOA/PFOS. Given what is believed to be the cumulative nature of PFAS exposures, and the fact that these substances were continuously discharged into the region's public water supply for nearly forty years, extreme caution should be taken to completely eliminate any further PFAS chemicals from entering into the public water systems.

67. Upon information and belief, there numerous other PFAS chemicals that have not been specifically named or identified that have also been released from Defendants' operations at the Fayetteville Works site and have contaminated the Cape Fear River at unsafe levels. Notwithstanding the great public interest and concern about Defendants' contamination of the Cape Fear River, Defendants *still* have not released information to the public or to regulators that would identify the number, variety and identity of PFASs they have generated in their manufacturing processes and released through waste streams into the environment around the Fayetteville Works site.

**E. The Chemicals at Issue.**

68. Perfluoroalkyl substances (PFASs) that have been detected in raw and/or treated water drawn from the Cape Fear River downstream of the Fayetteville Works facility, and that upon information and belief have resulted from Defendants' activities at the Fayetteville Works site, include, but are not limited to: perfluorooctanoic acid (PFOA or "C8") (CAS No. 335-67-1), several perfluoroalkyl ether carboxylic acids (PFECAs), including perfluoro-2-propoypropanoic acid (PFPrOPrA or "Gen X") (CAS No. 13252-13-6); and two byproducts of the Nafion® perfluorosulfonic acid (PFSA)[39] membrane manufacturing process that are known only to the Plaintiffs as "PFESA Byproducts 1 and 2" (or "Nafion® Byproducts 1 and 2").[40]

[39] Perfluorosulfonic acid is a perfluoroalkyl substance.

[40] The complete list of PFASs found by Dr. Knappe's team consists of:

a. Perfluorocarboxylic acids (PFCAs):
   i. Perfluorobutanoic acid (PFBA) (CAS No 375-22-4);
   ii. Perfluoropentanoic acid (PFPeA) (CAS No. 2706-90-3);

69. PFASs are a class of man-made chemicals that do not occur naturally in the environment. They have been widely used to make products more stain-resistant, waterproof and/or nonstick, although they have many other commercial applications in aerospace, automotive, construction, and electronics manufacturing. One of the ways PFASs may be differentiated from each other is by the "chain length," or the number of carbon atoms, in the molecule. PFOA, for example, has eight carbon atoms, so it is referred to as "C8" and considered a "long-chain" PFAS.

70. PFASs are highly persistent in the environment, as they contain perfluorinated chains that only degrade very slowly, if at all, under environmental conditions. In addition, some polyfluorinated chemicals break down to form perfluorinated ones.[41]

71. Regulators and the public have little access to information about the commercial applications, potential release mechanisms, and resulting exposure sources and concentrations for many of the individual PFASs, of which there are thousands. As a result, there is little knowledge of their environmental fate and transport characteristics, or their toxicological properties, because they have not been studied. Most of the data on fate and toxicity has been provided by industry and is limited to the required testing. Non-industry researchers are hindered by the difficulty of obtaining from the manufacturers (who treat these substances as proprietary) the necessary reference standards

iii. Perfluorohexanoic acid (PFHxA) (CAS No. 335-67-1);
iv. Perfluoroheptanoic acid (PFHpA) (CAS No. 335-67-1);
v. Perfluorooctanoic acid (PFOA or "C8") (CAS No. 335-67-1);
vi. Perfluorononanoic acid (PFNA) (CAS No. 375-95-1);
vii. Perfluorodecanoic acid (PFDA) (CAS No. 335-76-2);
b. Perfluorosulfonic acids (PFSAs):
i. Perfluorobutane sulfonic acid (PFBS) (CAS No. 375-73-5);
ii. Perfluorohexane sulfonic acid (PFHxS) (CAS No. 355-46-4);
iii. Perfluorooctane sulfonic acid (PFOS) (CAS No. 1763-23-1);
c. Perfluoroalkyl ether carboxylic acids (PFECAs);
i. Perfluoro-2-methoxyacetic acid (PFMOAA) (CAS No. 674-13-5);
ii. Perfluoro-3-methoxypropanoic acid (PFMOPrA) (CAS No. 377-73-1);
iii. Perfluoro-4-methyoxybutanoic acid (PFMOBA) (CAS No. 863090-89-5);
iv. Perfluoro-2-propoypropanoic acid (PFPrOPrA or "Gen X") (CAS No. 13252-13-6);
v. Perfluoro(3,5-diolxahexanoic) acid (PFO2HxA) (CAS No. 39492-88-1);
vi. Perfluoro(3,5,7-trioxaoctanoic) acid (PFO3OA) (CAS No. 39492-89-2);
vii. Perfluoro(3,5,7,9-tetraoxadecanoic) acid (PFO4DA) (CAS No. 39492-90-5).

[41] Arlene Blum, et al., "The Madrid Statement on Poly- and Perfluoroalkyl Substances (PFASs)," 123 *Env'tl Health Persp.* A 107 (May 2015), http://dx.doi.org/10.1289/ehp.1509934 (last viewed on January 28, 2018).

they need to study the toxicity of these substances in the laboratory and to develop analytical techniques to detect and quantify their presence in the environment.[42]

72. On information and belief, PFASs have sufficiently similar chemical structures and functions to render exposures cumulative, for purposes of their toxicity in humans and animals.

**a. "Long Chain" PFASs**

73. Of the PFASs, so-called "long chain PFASs"—in particular, the PFOA/C8 used in making Teflon® and a similar chemical used in making ScotchGuard,[43] PFOS—have been the most extensively studied and regulated to date.

74. In animal studies, some long-chain PFASs have been found to cause liver toxicity, disruption of lipid metabolism and the immune and endocrine systems, adverse neurobehavioral effects, neonatal toxicity and death, and tumors in multiple organ systems. In the growing body of epidemiological evidence, some of these effects are supported by significant or suggestive associations between specific long-chain PFASs and adverse outcomes, including associations with testicular and kidney cancers, liver malfunction, hypothyroidism, high cholesterol, ulcerative colitis, lower birth weight and size, obesity, decreased immune response to vaccines, and reduced hormone levels and delayed puberty.[44]

75. The "C8 Science Panel" that was empowered by DuPont to "offer a scientific answer to the important fundamental question: Is PFOA exposure as experienced by the class [of people who obtained their drinking water from the Ohio River] capable of causing serious latent disease?"[45] has concluded there is a "probable link" between exposure to the long-chain PFAS known as PFOA or C8 in drinking water and the serious conditions of pregnancy-induced hypertension and preeclampsia, high cholesterol, kidney cancer, thyroid disease, testicular cancer, and ulcerative colitis.[46]

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[42] *See, e.g.,* Wang et al., "A Never-Ending Story of Per- and Polyfluoroalkyl Substances (PFASs)?" 51 Environ. Sci. Technol. 2508 (2017).

[43] PFOS, which is perfluorooctanyl sulfonate, CAS No. 1763-23-1.

[44] *Id.*

[45] Letter dated January 22, 2010 from Laurence F. Janssen, Esq. [lead counsel for DuPont] to Drs. Fletcher, Steenland & Savitz [the C8 Science Panel], re: "Jack W. Leach et al., v. E.I. du Pont de Nemours and Company, Circuit Court of Wood County, WV, Civil Action No. 01-C-608."

[46] *See* ¶8, *supra.*

76. In 2006, the E.P.A. initiated the voluntary PFOA Stewardship Program, calling for the complete elimination of PFOA (C8) and long-chain PFASs from emissions to all media and from manufactured products by 2015, "because of concerns about the impact of PFOA and long-chain PFASs on human health and the environment, including concerns about their persistence, presence in the environment and in the blood of the general U.S. population, long half-life in people, and developmental and other adverse effects in laboratory animals."[47]

77. In 2009, the E.P.A. included PFOA/C8 and PFOS on its "Drinking Water Contaminant Candidate List 3," for which "the occurrence or anticipated occurrence of a contaminant was likely at levels of concern to human health."[48]

78. In 2009, the E.P.A. established provisional health advisories (PHAs) for short-term exposures to PFOA and PFOS through drinking water, recommending a level of 0.4 ppb (parts per billion) for PFOA and 0.2 ppb (parts per billion) for PFOS. In 2016, the E.P.A. issued more stringent lifetime health advisories for long-term exposures to C8 and PFOS, recommending that the *combined* level of these two PFASs in drinking water should not exceed 70 parts per trillion (ppt).[49] The similar PFASs found in the Cape Fear River—including Gen X and Nafion® Byproducts 1 and 2—have consistently been found at levels that well exceed the E.P.A.'s health advisories for PFOA and PFOS.

**b. "Short Chain" PFASs**

79. The most common replacements for the long-chain PFASs targeted by E.P.A.'s PFOA Stewardship Program are shorter-chain PFASs with similar structures, or compounds with fluorinated segments joined by ether linkages, such as the PFECAs that include Gen X and Nafion® Byproducts 1 and 2.

80. These shorter-chain fluorinated alternatives are more likely than not bioaccumulative, and they are still as environmentally persistent as long-chain substances or may degrade into equally

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[47] U.S. Envt'l Prot. Agency, "Fact Sheet: 2010/2015 PFOA Stewardship Program," accessed at https://www.epa.gov/assessing-and-managing-chemicals-under-tsca/fact-sheet-20102015-pfoa-stewardship-program#launch (last viewed on January 28, 2018).

[48] U.S. Envt'l Prot. Agency, "Drinking Water Contaminant Candidate List 3—Final," 74 Fed. Reg. 51850 (Oct. 8, 2009).

[49] U.S. Envt'l Prot. Agency, *Lifetime Health Advisories and Health Effects Support Documents for Perfluorooctanoic Acid and Perfluorooctane Sulfonate*, 81 Fed. Reg. 33250 (May 25, 2016).

persistent products.[50] Manufacturing applications often require a higher relative concentration of shorter-chain PFAS to achieve the same level of desired performance as provided by the longer-chain PFAS, resulting in higher application concentrations for the alternatives, and potentially higher concentrations being released to the environment.

81. As with the long-chain PFASs, evidence exists to support the toxicity of PFECAs in humans and animals, as noted in the March 11, 2009 Consent Order entered on DuPont's Premanufacture Notice for P-08-508 and P-08-509.

82. DuPont has been studying the health effects of the PFECAs known as Gen X since at least 1963, when it conducted an acute oral toxicity study in rats to determine the lethal dose for exposure to Gen X's ammonium salt. DuPont's internal data studies have demonstrated an association between Gen X and various health effects in laboratory animals that are consistent with the effects of other PFASs, including effects in the liver, kidney, pancreas, testicles, and immune system.[51]

83. The publicly-reported results of Defendants' studies on the toxicity of Gen X contain misrepresentations and factual misstatements that tend to understate Gen X's potential for toxicity.[52] Defendants' selective and/or misleading release of data on Gen X is consistent with Defendants' concealment of similar pertinent health data on C8—for which they received an administrative penalty from the E.P.A.

84. Data from DuPont's animal studies indicate that Gen X is an animal carcinogen in multiple organ systems in both male and female rats, and that Gen X poses reproductive/developmental risks, and poses risks of toxicity in the liver, kidneys, the hematological system, the adrenal glands, the stomach, as well as other adverse effects.[53]

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[50] Arlene Blum, et al., *supra* note 41.

[51] *See* TSCA Non-Confidential Business Information submitted to E.P.A. 8(e) Coordinator, USEPA, for 8EHQ-06-16478, https://assets.documentcloud.org/documents/2746960/GenX8eFilings.pdf (last viewed on January 28, 2018).

[52] *See* Beekam et al. "Evaluation of substances used in the GenX technology by Chemours, Dordrecht," RIVM Letter report 2016-0174 (National Institute for Public Health and the Environment Ministry of Health, Welfare and Sport, The Netherlands 2016); and J.M. Caverly Rae, et al., "Evaluation of chronic toxicity and carcinogenicity of ammonium 2,3,3,3-tetrafluoro-2-(heptafluoropropoxy)-propanoate in Sprague–Dawley rats," 2 Toxicology Reports 939 (2015).

[53] *See* data reported in Lisa Craig, "H-28548: Combined Chronic Toxicity/Oncogenicity Study 2-Year Oral Gavage Study In Rats"– Laboratory Project ID: DuPont-18405-1238" (MPI Research, Inc., Mattawan, Michigan 2013) (sponsored By E.I. du Pont de Nemours and Company).

85. Specifically, DuPont's data[54] show toxic effects from short term exposures, sub-chronic exposures, and long-term exposures:

a. Gen X exposure to rats and mice resulted in numerous different types of cancer at levels exceeding controls in the brain, liver, adrenal gland, pancreas (two types of pancreatic cancer), testes, as well as fibrosarcomas, malignant lymphomas, and uterine polyps.

b. Gen X exposure to rats and mice resulted in adverse reproductive and developmental effects, severe liver toxicity and adverse liver impacts from changes to RNA messaging, that may lead to adverse effects not only in the liver, but in other organs, as well as cancer occurrence.

c. Gen X exposure to rats and mice resulted in adverse impacts in the adrenal gland, kidneys, stomach, bile duct, brain, reproductive cycles, the tongue, eyes, and immune system, and potentially may result in genotoxicity.

86. The toxicity results from reports of animal studies in fact indicate that Gen X is a significantly toxic PFAS. Human studies have not been done at this time. However, based on the available animal studies, Gen X may in fact be as toxic *or more toxic* to humans than PFOA.

87. Likely human adverse effects from Gen X exposure could range from reproductive/ developmental adverse effects to adverse liver effects, to human immune system/RNA messaging disruption adverse impacts, to stomach, ocular, and tongue toxicity, to human cancer. Human exposure to Gen X in drinking water is continuous, moreover, unlike the exposure in existing animal studies.

88. In July 2017, the North Carolina Health and Human Services Department released a health goal for exposure to Gen X in drinking water of 140 nanograms per liter (parts per trillion or "ppt"). According to the State, this updated health goal of 140 ppt is expected to be the most conservative and health protective for non-cancer effects in bottle-fed infants, pregnant women, lactating women, children and adults. It is based, however, on the available public literature that consists primarily of DuPont-funded (and misleading) publications as discussed above.

[54] *Id.*

89. Given what is believed to be the cumulative nature of PFAS exposure, and the fact that consumers of the public drinking water drawn from the Cape Fear River have already been exposed to a combination of Defendants' perfluorinated contaminants (including PFOA/C8, Gen X, and Nafion® Byproducts 1 and 2, and an unknown number of other PFASs) for the last thirty-seven years (or more), extreme caution should be taken to completely eliminate any further PFAS chemicals from entering into the region's public water supply.

**F. Defendants' Statutory Violations.**

90. Defendants violated their ongoing duty under both North Carolina and Federal law to disclose to the State of North Carolina any known constituents in their discharges that posed a potential risk to human health, in connection with their NPDES Permit. *See, e.g.,* 15A N.C.A.C. 2H.0105(j)(requiring applicants to disclose "all known toxic components that can be reasonably expected to be in the discharge, including but not limited to those contained in a priority pollutant analysis"); 14A N.C.A.C. 2B.0202(64) (defining toxic substances to include "any substance or combination of substances…which after discharge and upon exposure…has the potential to cause death, disease, behavioral abnormalities, cancer, genetic mutations, physiological malfunctions (including malfunctions or suppression in reproduction or growth) or physical deformities in such organisms or their offspring"); 40 C.F.R. § 122.41(l)(8) (requiring, as a standard NPDES permit condition, that "[w]here the permittee becomes aware that it failed to submit any relevant facts in a permit application, or submitted incorrect information in a permit application . . . it shall promptly submit such facts or information."); U.S. Envt'l Prot. Agency, "Revised Policy Statement on Scope of Discharge Authorization and Shield Associated with NPDES Permits," available at https://www3.epa.gov/npdes/pubs/owm0131.pdf.

91. Defendants also violated, and continue to violate, their duty under the NPDES Permit to take "all reasonable steps to minimize or prevent any discharge . . . in violation of [its] permit with a reasonable likelihood of adversely affecting human health or the environment," 40 C.F.R. § 122.41(d), as well as their duty under North Carolina groundwater regulations to take action to terminate and control any discharge of "waste or hazardous substance to the groundwaters of the

State, or in proximity thereto," mitigate any resulting hazards, and notify State regulators. 15A N.C.A.C. 2L .0106(b).

92. Defendants' ongoing discharges into the Cape Fear River have violated, and continue to violate, North Carolina water quality standards for surface water, in that they:

a. render the Cape Fear River waters injurious to aquatic life or wildlife, recreational activities, public health, or impair the waters for one or more of their designated uses, 15A N.C.A.C. 02B .0208(a); and

b. preclude, on a short term and/or long term basis, one or more of the best uses of the water, including as "a source of water supply for drinking, culinary, or food-processing purposes" and for "aquatic life propagation and maintenance of biological integrity (including fishing and fish), wildlife, secondary recreation, [and] agriculture." See 15A N.C.A.C. 2B .0216(2) and 15A N.C.A.C. 2B .0216(1) & .0211(1).

93. Defendants' ongoing discharges of Gen X and, upon information and belief, other perfluoroalkyl substances such as PFECAs (perfluoroalkyl ether carboxylic acids) including Nafion® Byproducts 1 and 2, into groundwater have violated, and continue to violate, North Carolina groundwater standards in that these discharges are comprised of substances which are not naturally occurring and for which no standard is specified, but are contaminating groundwater at or above the practical quantitation limit (PQL), as prohibited by 15A N.C.A.C. 2L .0202(c).

**G. Damages to Plaintiffs and Their Public Drinking Water Resources.**

94. In 2014 and 2015, water testing established the presence of C8 and PFOS compounds at the Northwest Water Treatment Plant operated by Brunswick County. In June 2017, additional testing found Gen X at the King's Bluff intake in amounts substantially in excess of the state health goal in raw water (ranging from 629 ppt to 830 ppt). Additional testing at this time also found Gen X in treated water at the Northwest Water Treatment Plant at levels substantially exceeding the state health goal, ranging from 695 to 910 ppt.

95. Testing performed on October 12, 2017, confirmed the continuing presence of C8, Gen X, and other perfluorinated chemicals in both raw and treated water at Brunswick County's Northwest

Water Treatment Plant.[55] Additionally, weekly testing by the University of North Carolina at Wilmington, in cooperation with the Cape Fear Public Utility Authority, has confirmed the presence of C8, Gen X, and other perfluorinated chemicals in both raw and treated water at the Authority's Sweeney Water Treatment Plant.[56]

96. Upon information and belief, Chemours took undisclosed steps to decrease its Gen X emissions after the public exposure in mid-2017 of its long history of Gen X contamination from the Fayetteville Works site. These undisclosed measures do not assure that GenX levels in water drawn from the Cape Fear River, even if treated, consistently remain below the state health goal of 140 ppt. For example, tests at Brunswick County's Northwest Water Treatment Plant on October 19, 2017 confirmed the presence of GenX at 281 ppt in raw water and 193 ppt in treated water.[57]

97. Chemours has not attempted (or achieved) any decrease in its other PFAS emissions, which include Nafion® Byproducts 1 and 2 and—upon information and belief—a number of other unidentified PFASs. Further, the PFASs Defendants released for several decades are believed to be contained in the sediment of the Cape Fear River, in the groundwater that feeds the River at the Fayetteville Works site, and in deposits in the watershed from the air emanating from the Fayetteville Works site. Thus, PFAS contaminants will continue to enter the Cape Fear River for decades to come even if Chemours removes these chemicals from its waste stream. Particularly in view of Defendants' long history of deceiving regulators and the public about emissions both from the Fayetteville Works site and from their other facilities in the United States, Plaintiffs cannot rely upon Chemours to protect the quality of the public drinking water Plaintiffs supply, but must investigate and develop an effective method of removing the continuing PFAS contamination from the raw water Plaintiffs obtain from the Cape Fear River and deliver to the public.

98. Each Plaintiff has suffered damages including contamination of their property and/or public water supply, as set forth in their Notice to Conform filed in the above-styled actions.

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[55] http://www.brunswickcountync.gov/wp-content/uploads/2017/10/BCPU-17-15909-10-12-17.pdf (last viewed on January 28, 2018).

[56] http://www.cfpua.org/DocumentCenter/View/10199 (last viewed on January 28, 2018); http://www.cfpua.org/DocumentCenter/View/10623 (last viewed on January 28, 2018).

[57] http://www.brunswickcountync.gov/wp-content/uploads/2017/11/BCPU-17-16244-10-19-17.pdf (last viewed on January 28, 2018).

## V. CAUSES OF ACTION

### COUNT I
### Public Nuisance

99. Plaintiffs incorporate by reference all other paragraphs of this Complaint as if fully set forth here, and further allege as follows.

100. Defendants' operation of the Fayetteville Works facility, and their discharges, emissions, and releases of perfluoroalkyl substances including, but not limited to, PFOA ("C8"), Gen X, Nafion® Byproducts 1 and 2, and other perfluoroalkyl substances known as PFECAs (perfluoroalkyl ether carboxylic acids), create a public nuisance that unreasonably endangers the health of thousands of North Carolina residents served by Plaintiffs' public water systems.

101. The condition created by Defendants affects a substantial number of people who use the Cape Fear River as a drinking water supply and interferes with the rights of the public at large to clean and safe drinking water.

102. An ordinary person would be reasonably annoyed or disturbed by the presence of toxic perfluoroalkyl substances including, but not limited to, PFOA ("C8"), Gen X, Nafion® Byproducts 1 and 2, and other perfluoroalkyl substances known as PFECAs (perfluoroalkyl ether carboxylic acids), that endanger the health of animals and humans and degrade water quality.

103. The seriousness of the environmental and human health risk Defendants have created far outweighs any social utility of Defendants' conduct in manufacturing products using perfluoroalkyl substances including, but not limited to, PFOA ("C8"), Gen X, Nafion® Byproducts 1 and 2, and other perfluoroalkyl substances known as PFECAs (perfluoroalkyl ether carboxylic acids), and concealing the dangers posed to human health and the environment.

104. Continuing harm caused by Defendants includes not only their ongoing releases of Gen X, Nafion® Byproducts 1 and 2, and other perfluoroalkyl substances known as PFECAs (perfluoroalkyl ether carboxylic acids), but also the continued propagation of Defendants' historical releases of perfluoroalkyl substances, including PFOA ("C8"), through migration in groundwater, leaching from soil, and release from sediments.

105. Defendants knew or, in the exercise of reasonable care, should have known that their manufacturing operations at the Fayetteville Works site were causing the type of contamination now found in the Cape Fear River. Defendants knew of the bioaccumulative, persistent properties of PFASs and the inability of conventional water treatment systems to remove them. Defendants knew that their perfluoroalkyl substances including, but not limited to, PFOA ("C8"), Gen X, Nafion® Byproducts 1 and 2, and other perfluoroalkyl substances known as PFECAs (perfluoroalkyl ether carboxylic acids), would contaminate the water supply in the Cape Fear River. In addition, Defendants knew that certain perfluoroalkyl substances including PFOA ("C8") are associated with serious toxic effects and cancers in humans exposed through drinking water, and that other similar PFECAs (perfluoroalkyl ether carboxylic acids), including Gen X, are associated with serious toxic effects in animals, have not been studied in humans, and present a probable risk to human health. As a result, it was foreseeable to Defendants that humans may be exposed to perfluoroalkyl substances including, but not limited to, PFOA ("C8"), Gen X, Nafion® Byproducts 1 and 2, and other perfluoroalkyl substances known as PFECAs (perfluoroalkyl ether carboxylic acids), by drinking treated drinking water drawn from the Cape Fear River. Defendants thus knew, or should have known, that their contamination would seriously and unreasonably interfere with the ordinary comfort, use, and enjoyment of the Cape Fear River.

106. The condition created by Defendants adversely affects the quality of the raw water drawn from the Cape Fear River and causes inconvenience and annoyance to Plaintiffs, who must incur costs in order to ensure the safety of the public drinking water they supply.

107. As a direct and proximate result of Defendants' creation of this public nuisance, Plaintiffs have suffered—and will continue to suffer—harm that is different from the type of harm suffered by the general public, and Plaintiffs will incur substantial costs to remove Defendants' contamination from the drinking water they distribute.

108. Defendants' conduct was a substantial factor in causing the harm to Plaintiffs. The harm to Plaintiffs and the citizens served by their public water systems will continue until an injunction is issued to abate the nuisance Defendants have created.

109. Plaintiffs seek all legal and equitable relief as allowed by law, including *inter alia* actual damages in an amount to be proven at trial, an injunction to abate the nuisance, all costs and expenses of suit and pre- and post-judgment interest.

**COUNT II**
**Private Nuisance**

110. Plaintiffs incorporate by reference all other paragraphs of this Complaint as if fully set forth here, and further allege as follows.

111. Defendants' operation of the Fayetteville Works facility, and their discharges, emissions, and releases of perfluoroalkyl substances including, but not limited to, PFOA ("C8"), Gen X, Nafion® Byproducts 1 and 2, and other perfluoroalkyl substances known as PFECAs (perfluoroalkyl ether carboxylic acids), constitute an unreasonable use of Defendants' land which has caused substantial and unreasonable interference with Plaintiffs' use and enjoyment of their property.

112. As a direct and proximate result of Defendants' conduct that created a nuisance, Plaintiffs have incurred injuries, damage, and harm as set forth above. Defendants are liable for damages in an amount to be proven at trial.

113. The nuisance Defendants have created is ongoing and the harm to Plaintiffs will continue until an injunction is issued to abate it.

114. Plaintiffs seek all legal and equitable relief as allowed by law, including *inter alia* actual damages in an amount to be proven at trial, an injunction to abate the nuisance, all costs and expenses of suit and pre- and post-judgment interest.

**COUNT III**
**Trespass to Real Property**

115. Plaintiffs incorporate by reference all other paragraphs of this Complaint as if fully set forth here, and further allege as follows.

116. Defendants' operation of the Fayetteville Works facility, and their discharges, emissions, and releases of perfluoroalkyl substances including, but not limited to, PFOA ("C8"), Gen X, Nafion® Byproducts 1 and 2, and other perfluoroalkyl substances known as PFECAs (perfluoroalkyl ether carboxylic acids), have resulted in an unauthorized entry by Defendants upon real property owned by Plaintiffs.

117. Defendants' unauthorized entry upon Plaintiffs' property has resulted in substantial injury, damage, and harm to Plaintiffs and constitutes a trespass to real property.

118. Plaintiffs seek all legal and equitable relief as allowed by law, including *inter alia* actual damages in an amount to be proven at trial, an injunction to prevent further trespasses, and all costs and expenses of suit and pre- and post-judgment interest.

**COUNT IV**
**Trespass to Chattels**

119. Plaintiffs incorporate by reference all other paragraphs of this Complaint as if fully set forth here, and further allege as follows.

120. Defendants' operation of the Fayetteville Works facility, and their discharges, emissions, and releases of perfluoroalkyl substances including, but not limited to, PFOA ("C8"), Gen X, Nafion® Byproducts 1 and 2, and other perfluoroalkyl substances known as PFECAs (perfluoroalkyl ether carboxylic acids), have resulted in an unauthorized interference with Plaintiffs' possession and use of their water and water systems.

121. Defendants' unauthorized interference has resulted in substantial injury, damage, and harm to Plaintiffs and constitutes a trespass to chattels.

122. Plaintiffs seek all legal and equitable relief as allowed by law, including *inter alia* actual damages in an amount to be proven at trial, an injunction to prevent further trespasses, and all costs and expenses of suit and pre- and post-judgment interest.

**COUNT V**
**Negligence *Per Se***

123. Plaintiffs incorporate by reference all other paragraphs of this Complaint as if fully set forth here, and further allege as follows.

124. Defendants' conduct violates federal and state public safety statutes that are intended to protect human health and the environment, as set forth above.

125. Plaintiffs are within the class of persons the violated state and federal statutes are intended to protect, and their injuries are of the nature contemplated by the statutes.

126. Defendants' negligence *per se* directly and proximately caused Plaintiffs' injury, damage, and harm as set forth above.

127. Plaintiffs seek actual damages in an amount to be proven at trial, all costs and expenses of suit and pre- and post-judgment interest.

**COUNT VI**
**Negligence**

128. Plaintiffs incorporate by reference all other paragraphs of this Complaint as if fully set forth here, and further allege as follows.

129. Defendants owed Plaintiffs a duty of reasonable care in the manufacture, management, use, storage, handling, and disposal of perfluoroalkyl substances including, but not limited to, PFOA ("C8"), Gen X, Nafion® Byproducts 1 and 2, and other perfluoroalkyl substances known as PFECAs (perfluoroalkyl ether carboxylic acids), in the release of these substances in and around the Fayetteville Works facility, and in the remediation of contamination those releases caused.

130. Defendants had a duty, in particular, to: (1) identify the potentially harmful perfluoroalkyl substances associated with their operations that were released into the air, soil, groundwater, and surface water; (2) investigate and understand the characteristics of the perfluoroalkyl substances associated with their operations before releasing those substances into the environment; (3) conduct their operations in a manner that would not unreasonably endanger human health and the environment; (4) investigate and remediate environmental releases that they knew posed a potential risk to human health and the environment; and (5) warn Plaintiffs of environmental releases that created a probable risk to human health in the public drinking water supply, due to the persistence and toxicity of these substances and the fact that they are not removed through conventional water treatment processes.

131. Defendants failed to exercise ordinary and reasonable care in the manufacture, management, use, storage, and handling of their perfluoroalkyl substances including, but not limited to, PFOA ("C8"), Gen X, Nafion® Byproducts 1 and 2, and other perfluoroalkyl substances known as PFECAs (perfluoroalkyl ether carboxylic acids), in the release of these substances in and around the Fayetteville Works facility, and in the remediation of contamination those releases caused.

132. Defendants' failure to exercise ordinary and reasonable care has directly and proximately caused the groundwater, surface water, soil, and river sediment in and around the Fayetteville Works facility to become contaminated with Defendants' persistent, bioaccumulative, and toxic perfluoroalkyl substances.

133. Defendants' failure to exercise ordinary and reasonable care has directly and proximately caused Plaintiffs to suffer injury, damage, and harm as set forth above.

134. Plaintiffs seek all legal and equitable relief as allowed by law, including *inter alia* actual damages in an amount to be proven at trial, and all costs and expenses of suit and pre- and post-judgment interest.

**COUNT VII**
**(Failure to Warn)**

135. Plaintiffs incorporate by reference all other paragraphs of this Complaint as if fully set forth here, and further allege as follows.

136. Defendants had a duty to exercise reasonable care and to warn Plaintiffs of the contamination in the Cape Fear River of perfluoroalkyl substances, the likelihood that PFASs were reaching Plaintiffs' public water systems, the lack of efficacy of conventional treatment systems at removing PFASs, and the persistent, bioaccumulative and toxic characteristics of PFASs.

137. As a direct and proximate result of Defendants' negligent failure to warn, Plaintiffs have incurred injuries, damage, and harm as set forth above.

138. Plaintiffs seek actual damages, in an amount to be proven at trial.

**COUNT VIII**
**(Negligent Manufacture)**

139. Plaintiffs incorporate by reference all other paragraphs of this Complaint as if fully set forth here, and further allege as follows.

140. PFASs manufactured, generated, used, stored, handled, or disposed of by Defendants in the manufacture of fluoroproducts constitute dangerous instrumentalities or substances.

141. Defendants failed to execute the highest or utmost caution commensurate with the serious risk of harm involved in the manufacture, generation, use, storage, handling, and disposal of PFASs, resulting in the fluorochemical contamination described herein.

142. As a direct and proximate result of Defendants' negligent manufacture of fluoroproducts, Plaintiffs have incurred the injuries, damage, and harm as set forth above.

## COUNT IX
## Riparian Rights / Injunctive Relief

143. Plaintiffs incorporate by reference all other paragraphs of this Complaint as if fully set forth here, and further allege as follows.

144. As set forth in the Notice to Conform filed separately in this matter, Plaintiffs own riparian rights including, but not limited to, the right to the natural flow of the Cape Fear River undiminished in quality except as may be occasioned by the reasonable use of the water by other riparian owners.

145. Defendants have materially interfered with and continue to materially interfere with Plaintiffs' riparian rights by causing the waters of the Cape Fear River to contain perfluoroalkyl substances that unreasonably diminish the quality of the waters of the Cape Fear River where Plaintiffs withdraw water from the Cape Fear River for human consumption.

146. As a direct and proximate result of Defendants' interference with Plaintiffs' riparian rights, Plaintiffs have suffered and will continue to suffer the injuries, damage, and harm identified in preceding paragraphs. Defendants are therefore liable to Plaintiffs for compensatory damages, in an amount to be proven at trial.

147. Plaintiffs are further entitled to such prohibitory and mandatory injunctive relief as is necessary to prevent continuing injury to their riparian rights as a result of Defendants' actions and inactions.

## COUNT X
## Punitive Damages

148. Plaintiffs incorporate by reference all other paragraphs of this Complaint as if fully set forth here, and further allege as follows.

149. Defendants' conduct in secretly releasing their persistent, bioaccumulative, and toxic perfluoroalkyl substances into the Cape Fear River and contaminating the drinking water source for thousands of North Carolinians, all the while misleading state and Federal regulators and the public, was willful and wanton, in that Defendants' acted with a conscious disregard for and indifference to the rights and safety of others, which Defendants knew or should reasonably have known was reasonably likely to result in injury, damage or harm.

150. Defendants' willful and wanton conduct caused Plaintiffs to suffer injury, damages, and harm as set forth above, for which Plaintiffs seek punitive damages as allowed by law.

## VI. PRAYER

**WHEREFORE,** Plaintiffs respectfully pray that this Court grant the following relief:

1. Entry of judgment for Plaintiffs and against Defendants for compensatory and punitive damages as described in each Plaintiff's Notice to Conform;

2. Entry of such injunctive relief as necessary to abate the nuisance caused by Defendants and to prevent continuing injury and damages to Plaintiffs; and

3. For such other and further relief as the Court deems just and proper.

TRIAL BY JURY IS DEMANDED PURSUANT TO FEDERAL RULE OF CIVIL PROCEDURE 38.

Dated this 31st day of January, 2018.

Respectfully Submitted,

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